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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,583	07/28/2006	Jonathan Hughes	WW/3-22352/A/PCT	9687

324 7590 11/15/2007  
CIBA SPECIALTY CHEMICALS CORPORATION  
PATENT DEPARTMENT  
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TARRYTOWN, NY 10591-9005

EXAMINER
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ARIANI, KADE

ART UNIT	PAPER NUMBER
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1651

MAIL DATE	DELIVERY MODE
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11/15/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/587,583	<b>Applicant(s)</b> HUGHES ET AL.	
	<b>Examiner</b> Kade Ariani	<b>Art Unit</b> 1651	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                 | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

### ***DETAILED ACTION***

The preliminary amendment filed on 07/08/2007, has been received and entered.

Claims 1-21 are pending in this application and were examined on their merits.

### ***Double Patenting Rejections***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

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A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-21 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 9, and 12-20 of Hughes (US application No. 10/523302). Although the conflicting claims are not identical, they are not patentably distinct from each other because they are essentially reciting the same invention.

Claims 1, 9, and 12- 20 of Hughes recite a process of producing fermentation product at a temperature of at least 50°C, solid-liquid treatment comprising adding cationic and anionic polymers into the mixture, charged microparticulate material, swell able clays, silica based materials, solid by-product is lignin and analogous material, fermentation product is ethanol, glycerol, amino acids, and fermentation product is

Thus, it would have been obvious to one skilled in the art at the time the invention was made to use the process disclosed by of Hughes to provide the claimed invention.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coffey et al. (US 2003/0155091 a1) in view of Sun & Cheng (Bioresource Technology, 2002, Vol. 83, p-1-11) and further in view of Verser et al. (US Patent No. 6,927,048) and further in view of Savage (US Patent No. 5,552,316).

Claims 1-21 are drawn to a process of separating suspended solids from a fermentation liquor by subjecting the liquor to a solids-liquid separation stage, the fermentation liquor is produced in a fermentation process for the production of a fermentation product, in which the liquor has been subjected to a temperature of at least 50°C, wherein the solid-liquid separation stage is assigned by a treatment system, anionic polymer, cationic polymers and siliceous material.

Coffey et al. teach a process of separating suspended solids by subjecting the liquid to a solid-liquid separation stage, the treatment system comprising polymers derived from cationic and anionic monomers, siliceous material, bentonite, intrinsic viscosity of polymer solution, and use of such polymers for displacing unwanted soluble or colloidal materials from an aqueous cellulosic suspension and as well as to increase

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the efficiency of the dewatering, and mechanical dewatering (press dewatering) (see Abstract, 0002, 0006, 0022-0029, 0030, 0031, 0075-0078, and 0108).

Coffey et al. do not teach separating suspended solids from fermentation liquor, which has been subjected to a temperature of at least 50°C. However, Sun & Cheng teach fermentation process for a production of ethanol from lignocellulosic material in which the liquor has been subjected to a temperature of at least 50°C (see Abstract & p. 5, 2<sup>nd</sup> column 3<sup>rd</sup> paragraph, and & 6, 1<sup>st</sup> column, 2<sup>nd</sup> paragraph). Sun & Cheng also teach high substrate concentration can cause substrate inhibition, the susceptibility of cellulosic substrates to cellulases depend on various factors including lignin content, lignin interferes with hydrolysis by blocking access of cellulases to cellulose and by irreversibly binding hydrolytic enzymes (p.7, 1<sup>st</sup> column 1<sup>st</sup> paragraph).

Verser et al. teach a process for producing ethanol, and valuable co-products mainly for use in animal feed or food, and teach liquid-solid separation (see abstract, Figure 4, column 2 lines 14-16, column 16 lines 6-25).

Savage teach a process of separating suspended solids (solid liquid separation) from a fermentation liquor by subjecting the liquor to treatment system comprising cationic and anionic polymers (flocculants) to clarify the fermentation liquor, acrylic acid, maleic acid (see Abstract, column 2, lines 52-67, and column 3, lines 6-9).

Therefore, it would have been obvious to one of ordinary skill in the art to apply the treatment system as taught Coffey et al. to the fermentation liquor of Sun & Cheng to provide the claimed invention. As taught by Coffey et al., the motivation would be to increase the efficiency of the fermentation process by increasing the dewatering

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efficiency (therefore increasing the proportion of solids for further treatment) and displacing unwanted soluble or colloidal materials such as lignin from an aqueous cellulosic suspension. Since as taught by Sun & Cheng the presence of waste materials such as lignin in the fermentation liquor reduce the efficiency of hydrolysis, and increase the cost of hydrolysis.

**Conclusion**

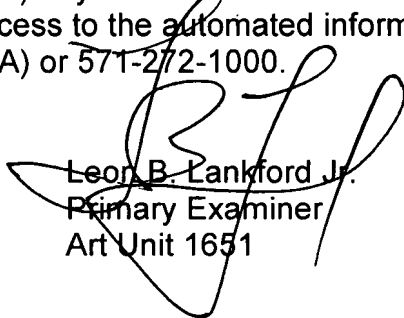
No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kade Ariani whose telephone number is (571) 272-6083. The examiner can normally be reached on 9:00 am to 5:30 pm EST Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on (571) 272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kade Ariani  
Examiner  
Art Unit 1651

  
Leon B. Lankford Jr.  
Primary Examiner  
Art Unit 1651